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| EXAMINER | |
|---|---|
| CLAWSON, STEPHEN J | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/567,709 | ENDERS ET AL. | |
| | Examiner | Art Unit | |
| | STEPHEN CLAWSON | 4172 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *30 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/7/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 101*

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 27 and 28 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs and signals are non-statutory subject matter. Claim 28 defines a computer program that is stored on a data carrier. A data carrier could be construed as an electrical signal and, therefore, is not a statutory storage medium.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 16- 27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Leen (Leen, et. al. "TTCAN: A New Time-Triggered Controller Area Network").

Regarding claim 16, Leen discloses a method for establishing one user corresponding to a transceiver, from multiple users of a data network, as a pilot master for emitting a pilot signal to which other users of the data network can synchronize themselves, comprising:

providing at least two of the users as pilot-master-capable; and **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that any node within a set of nodes in the network are capable of being the time master.)**

checking by at least the pilot-master-capable users, during a checking time interval of random duration individually assigned to them, whether an external pilot signal generated by another user is being transmitted on the data network, wherein:

the pilot-master-capable user, which detects no external pilot signal on the data network during its checking time interval and randomly ends its assigned checking time interval earliest in comparison to the checking time intervals of the other pilot-master-capable users, actually becomes pilot master and emits the pilot signal after the random duration of its checking time interval has elapsed. **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that if the current time master fails to release a reference message, the next highest priority potential time master will provide this function after a short time-out period. Each node is randomly placed on the network and, therefore, assigned a random priority number. This number is stored in Ref_Trig_Offset and varies in proportion to the priority of the respective potential time master. This controls the checking time interval.)**

Regarding claim 17, Leen teaches the method as recited in Claim 16, wherein:

a) the pilot master assigns the pilot mastership to itself only temporarily for a transmission time interval of random duration and it ends the emission of the pilot signal again after expiration of this transmission time interval; **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that to ensure the presence of a reference signal**

**that multiple nodes can be time (pilot) masters. These potential pilot masters are priority ordered. If the current time master fails to release a reference message within a transmission time interval, the next highest priority potential time master will provide this function after a short time-out period.)**

b) the last temporary pilot master, after expiration of the transmission time interval, checks again, during a further checking time interval of random duration assigned to it, whether a pilot signal generated by another user is being transmitted on the data network; **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that to Ref_Trig_Offset, which is a short time-out period in the event of a master pilot failure, is used to allow the next highest priority time master to begin sending a pilot message.)**

c) the last temporary pilot master becomes pilot master again and emits the pilot signal if it detects no external check signal on the data network during the further checking time interval and no other pilot-master-capable user claims the pilot mastership for itself earlier; and **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that to Ref_Trig_Offset, which is a short time-out period in the event of a master pilot failure, is used to allow the next highest priority time master to begin sending a pilot message.)**

d) the steps a) through c) are repeated for a predefined number of times X-1. **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that the process continues until a pilot master is found for the specified interval.)**

Regarding claim 18, Leen discloses the method as recited in Claim 17, wherein the step b) is executed only after expiration of a delay time after the end of the step a). ; **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that to Ref_Trig_Offset, which is a short time-out period in the event of a master pilot failure, is used to allow the next highest priority time master to begin sending a pilot message.)**

Regarding claim 19, Leen teaches the method as recited in Claim 18, wherein the last pilot master remains the permanent pilot master and permanently emits the pilot signal after the X-1 th repetition. **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that to Ref_Trig_Offset, which is a short time-out period in the event of a master pilot failure, is used to allow the next highest priority time master to begin sending a pilot message. This pilot master will remain the pilot master as long as its priority number is higher than the other potential pilot masters on the network.)**

Regarding claim 20, Leen discloses the method as recited in Claim 19, wherein the permanently implemented pilot master emits a recognition signal in the form of a ping signal. **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses a reference message sent by the pilot master. Along with providing network timing, this message provides a recognition signal to other nodes in the form of a ping.)**

Regarding claim 21, Leen teaches the method as recited in Claim 20, wherein the permanent pilot mastership is only ended by turning off the data network or a reset

or malfunction of the permanent pilot master. **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that the pilot master remains the timekeeper unless it fails to send the timing message within a certain time period or malfunctions. Likewise if the network fails or is reset the pilot master will no longer necessarily be the timekeeper master.)**

Regarding claim 22, Leen discloses the method as recited in Claim 21, wherein, after permanent implementation of the pilot master and after reception of the ping signal, all other users of the data network enter a temporary slave state and synchronize themselves to the pilot signal emitted by the pilot master. **(Leen pg. 81, "3.2 Reference Message"; Leen discloses the reference message (pilot tone) acts as a ping that benchmarks time. Based on priority, one pilot master exists while all other potential pilot masters act as slaves.)**

Regarding claim 23, Leen teaches the method as recited in Claim 16, wherein the user and/or the last current pilot master enters a temporary slave state if it detects an emitted pilot signal on the data network during a checking time interval. **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches if two or more potential time masters attempt to simultaneously release a reference message, then the priority coding of the identifier sub-field ensures that the highest priority potential time master succeeds and the other potential time master is set to a slave state.)**

Regarding claim 24, Leen discloses the method as recited in Claim 23, wherein a user in the temporary slave state checks, during the predefined duration of a checking time interval, whether an external pilot signal is being transmitted on the data network

and whether the ping signal is being emitted by the permanently implemented pilot master. **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that if a reference message is not received by the slave nodes then the next highest priority potential time master provides this function after a time-out period.)**

Regarding claim 25, Leen teaches the method as recited in Claim 24, wherein:

if either a ping signal is recognized or the predefined duration of the checking time interval has expired, the user in the temporary slave state changes to a permanent slave state, in which the user communicates to a controller of the data network that it is ready to participate in communication via the data network, and **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that one pilot master sends messages to synchronize the nodes of the network. All other nodes are slaves unless the pilot master fails to send a synchronization message within a given time period. These nodes participate in the data network regardless of whether they are time master or not.)**

if possible, the user in the permanent slave state synchronizes itself to the pilot signal emitted by the pilot master. **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches nodes on the network are synchronized via a pilot master.)**

Regarding claim 26, Leen discloses the method as recited in Claim 25, wherein:

a user remains in the permanent slave state as long as it detects an external pilot signal in the data network, **(Leen pg. 83-84, "6. Potential time masters"; Leen**

**teaches that one pilot master sends messages to synchronize the nodes of the network. All other nodes are slaves unless the pilot master fails to send a synchronization message within a given time period.)**

as soon as a pilot signal is no longer detected, the user checks again, during a checking time interval having predefined or random duration (S18), whether an external pilot signal is being transmitted, **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that if the current time master fails to release a pilot signal, then another potential time master provides a signal after a short time-out.)**

if an external pilot signal is determined during the checking time interval, the user remains in the permanent slave state; and **(Leen pg. 83-84, "6. Potential time masters"; Leen teaches that one pilot master sends messages to synchronize the nodes of the network. All other nodes are slaves unless the pilot master fails to send a synchronization message within a given time period.)**

if no external pilot signal is determined during the checking time interval, the user changes to the step of checking for the external pilot signal via the initialization state and the standby state after expiration of the duration of the checking time interval, in order to execute the method again from there. **(Leen pg. 83-84, "6. Potential time masters")**

Regarding claim 27, Leen teaches a computer program having a program code, wherein the program code is implemented to execute a method for establishing one user corresponding to a transceiver, from multiple users of a data network, as a pilot

master for emitting a pilot signal to which other users of the data network can synchronize themselves, comprising:

providing at least two of the users as pilot-master-capable; and **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that any node within a set of nodes in the network are capable of being the time master.)**

checking by at least the pilot-master-capable users, during a checking time interval of random duration individually assigned to them, whether an external pilot signal generated by another user is being transmitted on the data network, wherein:

the pilot-master-capable user, which detects no external pilot signal on the data network during its checking time interval and randomly ends its assigned checking time interval earliest in comparison to the checking time intervals of the other pilot-master-capable users, actually becomes pilot master and emits the pilot signal after the random duration of its checking time interval has elapsed. **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that if the current time master fails to release a reference message, the next highest priority potential time master will provide this function after a short time-out period. Each node is randomly placed on the network and, therefore, assigned a random priority number. This number is stored in Ref_Trig_Offset and varies in proportion to the priority of the respective potential time master. This controls the checking time interval.)**

Regarding claim 29, Leen teaches a data network having multiple users, on which a pilot signal is emitted by a user functioning as the pilot master, so that the other

users of the data network may synchronize themselves to this pilot signal, wherein each of the users is pilot-master-capable and is designed to execute, in order to be able to make itself pilot master if necessary, a method for establishing one user corresponding to a transceiver, from multiple users of a data network, as a pilot master for emitting a pilot signal to which other users of the data network can synchronize themselves, comprising:

providing at least two of the users as pilot-master-capable; and **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that any node within a set of nodes in the network are capable of being the time master.)**

checking by at least the pilot-master-capable users, during a checking time interval of random duration individually assigned to them, whether an external pilot signal generated by another user is being transmitted on the data network, wherein:

the pilot-master-capable user, which detects no external pilot signal on the data network during its checking time interval and randomly ends its assigned checking time interval earliest in comparison to the checking time intervals of the other pilot-master-capable users, actually becomes pilot master and emits the pilot signal after the random duration of its checking time interval has elapsed. **(Leen pg. 83-84, "6. Potential time masters"; Leen discloses that if the current time master fails to release a reference message, the next highest priority potential time master will provide this function after a short time-out period. Each node is randomly placed on the network and, therefore, assigned a random priority number. This number is**

**stored in Ref_Trig_Offset and varies in proportion to the priority of the respective potential time master. This controls the checking time interval.)**

***Claim Rejections - 35 USC § 103***

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leen (Leen, et. al. "TTCAN: A New Time-Triggered Controller Area Network") and further in view of Manis (U.S. Patent Pub. US 2003/0133473 A1).

Regarding claim 30, Leen discloses a synchronized data network such as a controller area network for use in motor vehicle. Leen does not teach the use of power supply lines as a data communication medium. However, Manis does. **(Manis pg. 1, para. 2)** Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine a synchronized data network over the power supply lines. One skilled in the art would make a combination to simplify wiring and thereby saving cost in creating a data network.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN CLAWSON whose telephone number is (571)270-7498. The examiner can normally be reached on M-F 7:30-5:00 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 571-272-7859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN CLAWSON/
Examiner, Art Unit 4172

/Lewis G. West/
Supervisory Patent Examiner, Art Unit 4172